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Air Quality Division
Warren Office

posted

January 23, 2024

Mr. Owen Pierce
EGLE-AQD
Warren District Office
27700 Donald Court
Warren, Michigan 48092-2793

Re: Violation Notice
SRN: N7411

Dear Mr. Pierce,

This letter is in response to your January 5, 2024 Violation Notice letter, which asserts a violation of Michigan Rule 336.1901 and general condition number 6 of PTI 50-13A. Your letter identifies two (2) separate site visits conducted “to investigate a recent complaint . . . regarding foul odors attributed to SMR Automotive’s operations.” In particular, you assert that AQD staff “observed the same odors originating from the wash station of the facility’s plastic automotive parts coating line.”

We recognize that automotive painting operations that use air dried urethane coatings include organic carrier solvents, some of which have odiferous properties. At SMR Automotive, we work diligently to maintain our systems to minimize the release of any paint fumes to the outside atmosphere.

During your November 15, 2023 site visit, I accompanied you on a tour of both the outside grounds around the plant and inside the plant production area. While the Violation Notice asserts that “[t]he odors observed outside the facility are the same as the odors observed in the wash station,” I respectfully disagree. Based on my experience working at the plant, the odors detected outside appeared to be more closely associated with paint. You indicated during a separate conversation with our air consultant Bruce Connell (Environmental Partners, Inc.), that the odor was a sweet smell. However, it should be noted “a sweet smell is synonymous with most solvents used in our paints and thinners which include ketones, alcohols and acetates.

We have reviewed the wash line operation and in particular the chemical titration concentrations and found them to be within the range specified by our chemical supplier. The exhaust system serving the wash line has an air flow rating of 7,000 acfm that draws from three separate stages of the wash line (entrance to stage 1, end of stage 2 and end of stage 5). The combined exhaust is discharged through a common exhaust stack at an elevation of 56-1/2 feet above grade (15-1/2 feet above the paint plant roof) to provide ample dilution to minimize the ground level detection of odors. Therefore, we are confident that this system is operating properly and was not the source of the odor which you detected.

The wash line consists of the following stages:

- Stage 1 - Hot water spray
- Stage 2 – Hot water with 3% vol Gardoclean T3803
- Stage 3 – Rinse water
- Stage 4 – RO water
- Stage 5 – water with 0.027% - 0.047% by vol Gardoprep 4533

The Gardoclean T3803 contains 10% - 15% wt citric acid (citrus smell). The Gardoprep 4533 contains up to 75% wt C8-C10 alcohols. Of these two chemicals, the Gardoprep 4533, may provide a similar sweet fragrance.

Stage 5 uses approximately 4 gallons per minute of city water after passing through a reverse osmosis treatment. Based on the concentration above, the Gardoprep 4533 shedding agent would be used at a rate of 0.0011 – 0.0019 gal/min. Based on the SDS information for the Gardoprep 4533, the C8-C10 alcohol would be added to the water at a maximum usage rate of 5 grams/min. Considering that while alcohols are predominantly water soluble, a small fraction could potentially evolve from the water into the air stream, and the dilution of that air with airflow from stages 1 and 2, along with the dispersion characteristics of the discharging exhaust stack, we believe the maximum ground level concentration would be in the single digit ppmv level. We do not believe this discharge would be detectable, let alone at a 3 or 4 intensity level, as described in the Violation Notice.

You also supplied four photos, all of which illustrate that the wash line exhaust vapor plume was clearly discharging from the stack in an upward direction and not being impacted by any building wake.¹ Based on the process description above and the photos you provided, we believe that the odors you detected during your site visits, were not from the wash line but instead potentially associated with paint. After receiving the Violation Notice, we focused on any potential odor sources during our regular walk-throughs of our painting operations. Our walk-throughs begin at the mix kitchen, continue to the paint line, and then to the paint line process water treatment room. With the Violation Notice in mind, we believe the odors detected during your visit could potentially have originated from the Paint Plant #1 process water treatment room.

In the process water treatment room, water from the downdraft water-wash paint spray booths is delivered to a containment tank, where it is treated with a flocculant to separate the overspray paint solids from the water. The water is then returned to the paint spray booths for continued use in the particulate overspray control system. The collected paint solids are then removed and placed into de-watering bags for appropriate disposal. We believe the process water and de-watered solids may contain some residual carrier compounds, such as ketones, alcohols, and acetates, all of which have a sweet odor.

If you look closer at IMG_0049.jpeg, which you provided to us, you will note that the west side of Paint Plant #1, closer to Busha Highway, has a lower roof line than other parts of the facility. The photo shows the natural draft exhaust stack for a hot water boiler, which extends above the roof of this building. This photo also shows that the boiler stack and rooftop exhaust from the air compressors within the process water treatment room would have aligned with the washline

¹ IMG_0048.jpeg, IMG_0049.jpeg, IMG_0050.jpeg, and IMG_0051.jpeg.

exhaust stack plume on the day of your visit, suggesting that any potential exhaust from this lower level could have been the source of the odor.

We believe that odors detected during your visit may have been emanating from the process water treatment room. With this room having a lower roof height, any odors from the process water treatment could potentially have been picked up by northwest winds and transported over and around the Paint Plant #1 building. Such an odor could have remained close to the building wake and then been drawn down to ground level at detectable concentrations.

The process water treatment room appears to have a noticeable odor. During a recent walk through, conducted by SMR Automotive staff, we noted several opportunities within the process water treatment room to reduce potential odors from being directed to the outside environment in the manner described above. The following is a list of several potential sources within the process water treatment area that we identified, and have since taken steps to minimize potential points of egress by odors from the process water treatment room:

1. At the time of your visits there was an open duct in the ceiling of the process water treatment room that led to the roof. We have since sealed this opening.
2. There are three air compressors in the process water treatment room which have access openings located in ductwork to provide access for performing maintenance on the cooling coils. These were found to be open during our walk-through. We have since replaced the cut-out panels and sealed the maintenance access panels to reduce the potential for any air to be released to the outside environment through the access openings.
3. The process water treatment room is equipped with louvers in the ceiling. These louvers were not open on the dates of your visits or our walk-through, nor have they been used for several years. However, we have sealed these louvers to avoid any unintentional release of air from the process water treatment room through the roof.
4. The process water treatment room is adjoined to a separate room containing a natural gas fired hot water boiler. The boiler room has a natural draft vent to draw outside air for combustion purposes. On the day of our walk-through, we discovered that the door between the boiler room and the process water treatment room was found open, potentially allowing the boiler to draw combustion air from the process water treatment room instead of the outside atmosphere. We have since added automatic door closure to this door to ensure that the boiler only draws fresh air from outside the building and does not draw air from the process water treatment room.

We believe that we have identified and addressed the odor issues you detected during your November 15, 2023 and December 20, 2023 site visits. Should you have any questions, please feel free to respond to me by e-mail (Jessica.geib@motherson.com) or by telephone at 810-388-2333.

Sincerely,

Jessica Geib
EHS Engineer
SMR Automotive Systems USA, Inc.

Cc: Jenine Camilleri, EGLE, Enforcement Unit
Brad Myott, EGLE, Field Operations
Joyce Zhu, EGLE – Warren District Office